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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/654,760	05/29/1996	MADHUKAR B. VORA	V&F-001	7867

7590 10/01/2003
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EXAMINER

CRANE, SARA W

ART UNIT	PAPER NUMBER
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2811

DATE MAILED: 10/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/654,760

Applicant(s)

VORA, MADHUKAR B.

Examiner

Sara W. Crane

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/12/02; 23/12/02.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

The amendments to the specification filed 3 December 2002 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

Page 8, line 11-12, addition of wells 62 and 64 to form an EEPROM device.

Page 8, line 24, the 300 angstrom thick grown oxide layer.

Page 10, line 10, the etch being vertically down, or vertical etch.

Page 10, lines 20-22, change of "gate windows" to --wells-- and the layer covering "the entire horizontal top surface of the substrate extending laterally in all directions."

Page 10, lines 23-24, the nitride layer having all portions being removed on horizontal surfaces.

Page 10, last 2 lines, to page 11, first line. The entire sentence beginning with "Next, a layer of oxide insulator"

Page 11, lines 3-4, nitride layer removed from vertical walls of wells 88 and 90.

Page 11, lines 6-7, gate oxide grown "on exposed silicon surfaces including the vertical walls of the wells 88 and 90"

Page 11, line 8, "doped substrate" layers.

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Page 11, lines 17-19, the phrase beginning with "and are self aligned . . ." and ending with "at the bottoms of the wells 88 and 90."

Page 12, lines 11-12, the wells "of the NMOS and PMOS devices."

Page 12, line 14, "over the EEPROM device."

Page 13, line 8, the "vertical" sidewalls.

Page 13, line 19, the designation of layer 86 as "drain."

Page 14, lines 8-9, the P well "of the NMOS device."

Page 14, lines 12- 16, the sentence beginning with "Next, the photoresist is removed . . ." and ending with "for the NMOS device."

All added material to the "Process Flow" presented in chart form on pages 15-20. Each added limitation either changes the scope of the teaching, or makes specific changes to details of the process itself which do not correspond to the original teaching of the specification.

Applicant is required to cancel the new matter in the reply to this Office Action.

Examiner notes that changes to the specification of the scope presented in this amendment are typically presented as a continuation-in-part application.

Claim Rejections - 35 USC § 112

Claims 1-5 and 7-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

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one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Each of claims 2, 7, 10, and 15 recites a "self-aligned" floating gate which is formed "without using any critical mask" and where a "critical mask" is a mask "which requires close alignment to registration marks so as to cause close alignment between different structures on an integrated circuit." The specification does not say anything at all about forming a "self-aligned" floating gate, and no "critical mask" or lack thereof is described anywhere in the specification. The only thing the specification says about the formation of the floating gate is the sentence spanning pages 9 and 10, which says, "To form the floating gate, the doped polysilicon is etched back off all horizontal surfaces and part way down into the recess gate windows" The specification does not say anything about whether or not a mask is used, much less whether or not such a mask is "critical." Moreover, no "self-aligned" floating gate is taught anywhere in the specification. The word "self-aligned" is used only to describe the memory cell, as in the heading of the table on page 13.

Claim 1 is included in the rejection because the remarks of 23 December 2003, page 16 et seq., discuss the meaning of the claim term "self aligned" (used in claim 1) in terms of the "critical mask" noted above. This interpretation of "self aligned" as applied to the floating gate of claim 1 would mean that claim 1 also encompasses new matter.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.


Claims 1-5 and 7-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The meaning of the term "self aligned" is not clear. The Board decision of 26 September 2001 appears to set forth a specific definition of this term. (I.e., a "self-aligned" floating gate "will not have any horizontal component on the surface of the substrate or on the bottom of the well and therefore will not extend beyond the perimeter of the trench.") Applicant now argues that "self aligned" is defined in terms of a process of making, which has no "critical mask." Such a definition is considerably broader than that adopted by the Board decision. Because the specification does not refer to any process of making the floating gate, defining the term "self aligned" in terms of a process of making lacks clarity.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Crane, whose telephone number is (703) 308-4894.

The fax phone number for this Group is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist, whose telephone number is (703) 308-0956.


Sara W. Crane
Primary Examiner
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